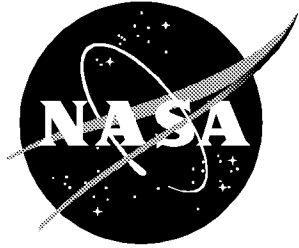


NASA/TM-2001-210657



# NASA Langley Scientific and Technical Information Output—2000

*Harriet B. Machie and Susan H. Stewart, Compilers  
Langley Research Center, Hampton, Virginia*

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February 2001

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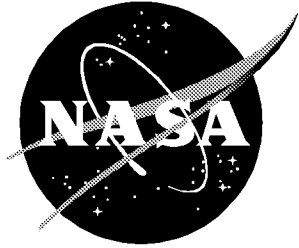
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# NASA Langley Scientific and Technical Information Output—2000

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## **Preface**

This report contains a listing of the NASA Langley Research Center's publicly available scientific and technical research output for C.Y. 2000.

The intent of this report is to provide a greater awareness of the broad scope of results and the importance of the research and development work conducted by scientists and engineers at Langley. This current awareness is mandated by the National Aeronautics and Space Act of 1958, which provides for the widest practical dissemination of NASA research.

During C.Y. 2000, Langley's contributions to NASA and non-NASA literature included 6 Special Publications, 19 Technical Publications, 4 Conference Publications, 78 Technical Memorandums, 100 Contractor Reports, 134 Journal Articles and Book Publications, 512 Meeting Presentations, 48 Technical Talks, 4 Tech Briefs, and 28 Patents.

## Introduction

The NASA Langley Research Center is one of the Nation's leading laboratories for research and development in the sciences of aeronautics and space technology. Langley conducts basic and applied research in the areas of aerospace systems, concepts, and analysis, aerodynamics, aerothermodynamics, and acoustics, structures and materials, airborne systems, atmospheric sciences, and systems engineering.

This document contains a bibliography of Langley's publicly available scientific and technical research output for 2000 which is processed through the Center's Office of the Chief Information Officer to become an integral part of NASA's Agency-wide Scientific and Technical Information (STI) system. The results of Langley's research are disseminated in a variety of NASA and non-NASA scientific and technical media and information systems. This document is intended to be a reference summary for researchers and a current awareness publication for the scientific, research, and academic community. Details of the availability of the research references in this document are found in the section, "Availability," on page vii.

Many Langley reports are available electronically on the Langley Technical Report Server (LTRS) at <http://techreports.larc.nasa.gov/ltrs/ltrs.html> or the Institute for Computer Applications in Science and Engineering (ICASE) Technical Report Server (ITRS) at <http://www.icase.edu/docs/library/itrs.html> via the World Wide Web (WWW). The relative Uniform Resource Locators are noted below citations for reports available electronically.

The citations are grouped by the Scientific and Technical Aerospace Reports (STAR) subject categories and listed alphabetically by author or innovator. The Langley organization to which the senior author or innovator is assigned and the Research and Technology Objectives and Plans (RTOP) number are noted below citations when appropriate and included in the indexes.

Patents listed are those which were issued in 2000 and owned by Langley Research Center.

Publication of some journal articles was not known at press time for the 1999 issue of this document. These articles are therefore listed in the 2000 issue.

## Availability

<u>Category</u>	<u>Source</u>
NASA Reports	NASA Center for AeroSpace Information (CASI) 7121 Standard Drive Hanover, MD 21076-1320 (301) 621-0390  National Technical Information Service (NTIS) 5285 Port Royal Road Springfield, VA 22161-2171 (703) 605-6000
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- 1** Chambers, J. R.: Partners in Freedom: Contributions of the Langley Research Center to U.S. Military Aircraft of the 1990's. NASA/SP-2000-4519, October 2000, 269 p.  
<http://techreports.larc.nasa.gov/ltrs/PDF/2000/spec/NASA-2000-sp4519.pdf>  
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- 2** Ferlemann, S. M.; Robinson, J. S.; Martin, J. G.; Leonard, C. P.; Taylor, L. W., III; and Kamhawi, H.: Developing Conceptual Hypersonic Airbreathing Engines Using Design of Experiments Methods. Presented at 21st AIAA Aerodynamic Measurement Technology and Ground Testing Conference, June 19-22, 2000, Denver, Colorado. AIAA Paper No. 2000-2694.  
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- 5** Kincaid, R. K.; Weber, M.; and Sobieszczanski-Sobieski, J.: Performance of a Bell-Curve Based Evolutionary Optimization Algorithm. Presented at 41st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference and Exhibit, April 3-6, 2000, Atlanta, Georgia.  
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- 16** Birch, T. J.; Allen, J. M.; and Wilcox, F. J., Jr.: Force, Surface Pressure and Flowfield Measurements on Slender Missile Configurations at Supersonic Speeds. Presented at 18th AIAA Applied Aerodynamics Conference and Exhibit, August 14-17, 2000, Denver, Colorado. AIAA Paper No. 2000-4207.  
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- 17** Bobbitt, C. W.; Everhart, J. L.; Foster, J. M.; Hill, J. S.; McHatton, J. R.; and Tomek, W. G.: National Transonic Facility Characterization Status. Presented at 38th AIAA Aerospace Sciences Meeting and Exhibit, January 10-13, 2000, Reno, Nevada. AIAA Paper No. 2000-0293.  
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- 19** Boyd, D. D., Jr.; Barnwell, R. W.; and Gorton, S. A.: A Computational Model for Rotor-Fuselage Interactional Aerodynamics. Presented at 38th AIAA Aerospace Sciences Meeting and Exhibit, January 10-13, 2000, Reno, Nevada. AIAA Paper No. 2000-0256.  
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- 20** Buck, G. M.: Simultaneous Global Pressure and Temperature Measurement Technique for Hypersonic Wind Tunnels. Presented at 21st AIAA Aerodynamic Measurement Technology and Ground Testing Conference, June 19-22, 2000, Denver, Colorado. AIAA Paper No. 2000-2649.  
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- 23** Chen, F.-J.; Yao, C.-S.; Beeler, G. B.; Bryant, R. G.; and Fox, R. L.: Development of Synthetic Jet Actuators for Active Flow Control at NASA Langley. Presented at Fluids 2000 Conference and Exhibit, June 19-22, 2000, Denver, Colorado. AIAA Paper No. 2000-2405.  
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- 30** Frink, N. T.; Pirzadeh, S. Z.; Parikh, P. C.; Pandya, M. J.; and Bhat, M. K.: The NASA Tetrahedral Unstructured Software System (TetrUSS). Presented at 22nd Congress of the International Council of the Aeronautical Sciences, August 27–September 1, 2000, Harrogate, United Kingdom. In Proceedings, ICAS Paper No. 0241.  
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- 41** Mineck, R. E.; and Pendergraft, O. C., Jr.: Test-to-Test Repeatability of Results From a Subsonic Wing-Body Configuration in the National Transonic Facility. NASA/TM-2000-210079, March 2000, 81 p.  
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- 42** Pack, L. G.; and Seifert, A.: Dynamics of Active Separation Control at High Reynolds Numbers. Presented at 38th AIAA Aerospace Sciences Meeting and Exhibit, January 10-13, 2000, Reno, Nevada. AIAA Paper No. 2000-0409.  
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- 43** Pamadi, B. N.; Brauckmann, G. J.; Ruth, M.; and Fuhrmann, H. D.: Aerodynamic Characteristics, Database Development and Flight Simulation of the X-34 Vehicle. Presented at 38th AIAA Aerospace Sciences Meeting and Exhibit, January 10-13, 2000, Reno, Nevada. AIAA Paper No. 2000-0900.  
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- 44** Paschal, K. B.; Jenkins, L. N.; and Yao, C-S.: Unsteady Slat-Wake Characteristics of a High-Lift Configuration. Presented at 38th AIAA Aerospace Sciences Meeting and Exhibit, January 10-13, 2000, Reno, Nevada. AIAA Paper No. 2000-0139.  
<http://techreports.larc.nasa.gov/ltrs/PDF/2000/aiaa/NASA-aiaa-2000-0139.pdf>  
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- 45** Pirzadeh, S. Z.: A Solution Adaptive Technique Using Tetrahedral Unstructured Grids. Presented at 22nd Congress of the International Council of the Aeronautical Sciences, August 27–September 1, 2000, Harrogate, United Kingdom. ICAS Paper No. 2000-2.4.4.  
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- 46** Pirzadeh, S. Z.: A Solution Adaptive Unstructured Grid Method by Grid Subdivision and Local Remeshing. *Journal of Aircraft*, Volume 37, No. 5, September–October 2000, p. 818-824.  
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- 172** Rivers, R. A.; Jackson, E. B.; Fullerton, C. G.; Cox, T. H.; and Princen, N. H.: A Qualitative Piloted Evaluation of the Tupolev Tu-144 Supersonic Transport. NASA/TM-2000-209850, February 2000, 44 p.  
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## **Astronautics**

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- 185** Desai, P. N.; Mitcheltree, R. A.; and Cheatwood, F. M.: Sample Returns Missions in the Coming Decade. Presented at 51st International Astronautical Congress, October 2-6, 2000, Rio de Janeiro, Brazil. Paper No. IAF-00-Q.2.04. <http://techreports.larc.nasa.gov/ltrs/PDF/2000/mtg/NASA-2000-51iac-pnd.pdf>  
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- 186** Fraysse, H.; Powell, R. W.; Rousseau, S.; and Striepe, S. A.: CNES-NASA Studies of the Mars Sample Return Orbiter Aerocapture Phase. Presented at 51st International Astronautical Congress, October 2-6, 2000, Rio de Janeiro, Brazil. Paper No. IAF-00-A.6.05.  
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- 190** Dorsey, J. T.; Myers, D. E.; and Martin, C. J., Jr.: Reusable Launch Vehicle Tank/Intertank Sizing Trade Study. Presented at 38th AIAA Aerospace Sciences Meeting and Exhibit, January 10-13, 2000, Reno, Nevada. AIAA Paper No. 2000-1043.  
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- 195** Queen, E. M.: Guidance Concept for a Mars Ascent Vehicle First Stage. NASA/TM-2000-210618, November 2000, 11 p.  
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- 196** Talay, T. A.: Glideback Booster Application to Small Payload Launcher Development—An Approach to Low-Cost Access to Space. Presented at 2nd NRO/AIAA Workshop on Space Launch Integration, May 2-4, 2000, Chantilly, Virginia.  
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- 201** MacConochie, I. O.: A Study of a Lifting Body as a Space Station Crew Exigency Return Vehicle (CERV). (NAS1-96013 FDC/NYMA, Inc.) NASA/CR-2000-210548, October 2000, 42 p.

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- 202** Angster, S.; Johns, B.; Garn, M. A.; Mazanek, D. D.; and Troutman, P. A.: International Space Station Immersive Accommodation Environment. Presented at 38th AIAA Aerospace Sciences Meeting and Exhibit, January 10-13, 2000, Reno, Nevada. AIAA Paper No. 2000-0680.

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- 548** Zhou, D. K.; Smith, W. L.; and Larar, A. M.: Temperature and Moisture Retrieval Algorithm Development for NAST Interferometer. Presented at International Radiation Symposium 2000, July 24-29, 2000, St. Petersburg, Russia.  
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- 587** Albrecht, B. A.; Rifkin, H.; Fairall, C. W.; Bond, N. A.; and Minnis, P.: Atmospheric Boundary Layer Structures Over the Eastern Equatorial Pacific—Mean States and Transformations. Presented at US CLIVAR Pan American PI Meeting, September 6-8, 2000, Potomac, Maryland.  
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- 610** Duda, D. P.; and Minnis, P.: Radiative Forcing by Contrail-Generated Cirrus Clouds Derived From Geostationary Satellite Data. Presented at EUMETSAT Meteorological Satellite Data User's Conference 2000, May 29-June 2, 2000, Bologna, Italy. In Proceedings.  
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- 611** Evans, K. F.; and Chambers, L. H.: SHDOM. Presented at International Workshop on Intercomparison of 3D Radiation Codes, November 17-19, 2000, Tucson, Arizona.  
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- 612** Ferrare, R. A.; *et al.*: Comparison of Aerosol Optical Properties and Water Vapor Among Ground and Airborne Lidars and Sun Photometers During TARFOX. *Journal of Geophysical Research*, Volume 105, No. D8, April 27, 2000, p. 9917-9933.  
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- 626** Lee, R. B., III: Characterizations of Lunar Irradiances Using Spacecraft Sensors. Presented at 72nd National Technical Association Conference, October 18-21, 2000, Hampton, Virginia.  
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- 647** Nguyen, L.; Ayers, J. K.; Doelling, D. R.; Minnis, P.; and Young, D. F.: Rapid Intercalibration of Operational and Research Meteorological Satellite Imagers. Presented at International Radiation Symposium 2000, July 24-29, 2000, St. Petersburg, Russia.  
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- 676** Wilber, A. C.; Smith, G. L.; and Stackhouse, P. W., Jr.: Regional Climatology and Statistics of Surface Radiation Budget. Presented at 15th Conference on Probability and Statistics in the Atmospheric Sciences, May 8-11, 2000, Asheville, North Carolina. In Proceedings.  
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